

CLAIMS

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1. An organic light-emitting device comprising a layer of light-emissive organic material interposed between a first electrode and a second electrode, at least one of the first and second electrodes comprising one or more electrode layers on the layer of light-emissive organic material for injecting charge carriers into the light-emissive organic material, wherein the organic light-emitting device further comprises a layer of dielectric material on the surface of the outermost electrode layer remote from the layer of light-emissive organic material.
 2. An organic light-emitting device according to claim 1 wherein the dielectric material is selected from the group consisting of SiO, AlN, SiO₂, Si₃N₄ and Al₂O₃.
 3. An organic light-emitting device according to claim 2 wherein the dielectric material is AlN.
 4. An organic light-emitting device according to any preceding claim, wherein the thickness of the dielectric layer is in the range of 0.01 to 10 microns.
 5. An organic light-emitting device according to claim 1 further comprising at least a second layer of dielectric material on the first layer of dielectric material, the thickness of the layers being selected so as to reduce mechanical stress on the cathode.
 6. An organic light-emitting device according to claim 5 wherein the first and second layers of dielectric material comprise layers of different dielectric materials.
 7. An organic light-emitting device according to claim 5 or claim 6 wherein the first and second layers of dielectric material comprise layers of materials selected from the group consisting of AlN, SiO₂, Si₃N₄ and Al₂O₃.
 8. An organic light emitting device according to claim 5 wherein the first layer of dielectric material is a layer of AlN and the second layer of dielectric material is a layer of Al₂O₃.

9. An organic light-emitting device according any of claims 5 to 8 wherein the first and second layers of dielectric material each have thicknesses in the range of 0.01 to 10 microns
10. An organic light emitting device comprising at least one layer of a light-emissive organic material interposed between a first electrode and a second electrode, at least one of the first and second electrodes comprising one or more electrode layers on the light-emissive material for injecting charge carriers into the light-emissive material; wherein the organic light-emitting device further has a stack comprising a first inert barrier layer and at least one gettering layer interposed between the outermost electrode layer and the first inert barrier layer for absorbing moisture and oxygen.
11. An organic light-emitting device according to claim 10 wherein the first inert barrier layer is a layer of a material selected from the group consisting of AlN, Al₂O₃, SiO₂ and Si₃N₄, and is preferably a layer of AlN.
12. An organic light-emitting device according to claim 10 wherein the first inert barrier layer has a thickness in the range of 0.01 to 10 microns.
13. An organic light-emitting device according to claim 1 wherein the stack further comprises a second inert barrier layer interposed between the gettering layer and the surface of the outermost electrode layer remote from the layer of light-emissive organic material.
14. An organic light-emitting device according to claim 13 wherein the second inert barrier layer is a layer of sputtered aluminium and the first inert barrier layer is a layer of AlN.
15. An organic light-emitting device according to claim 13 wherein the first and second inert barrier layers each have a thickness in the range of 0.01 to 10 microns.
16. An organic light-emitting device according to any of claims 10 to 15 wherein the gettering layer is a layer of a reactive metal or metal alloy, or a hygroscopic oxide.
17. An organic light-emitting device according to claim 16 wherein the gettering layer is a layer of BaO.
18. An organic light-emitting device according to claim 16 wherein the gettering layer is a layer of a material selected from the group consisting of Li, Ca, LiAl, Ba and Cs.

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19. An organic light-emitting device according to claim 18 wherein the gettering layer is a layer of Ca.
 20. An organic light-emitting device according to any of claims 10 to 19 wherein the thickness of the gettering layer is in the range of 0.01 to 5 microns.
 21. An organic light emitting device according to claim 10 wherein at least one of the first and second electrodes is a multi-layered electrode comprising a first low work function conductive layer on the layer of light-emissive organic material and a second conductive layer on the surface of the first low work function conductive layer remote from the layer of light-emissive organic material.
 22. An organic light-emitting device according to claim 21 wherein the first low work function conductive layer is an evaporated layer of calcium having a thickness of 200nm or less, and the second conductive layer is a layer of evaporated aluminium having a thickness of 5 microns or less.
 23. A method of providing a protective cap on a first electrode of an organic light-emitting device comprising at least one layer of a light-emissive organic material between first and second electrodes for injecting charge carriers into the light-emissive organic material, said method comprising the step of forming a first layer of a dielectric material on the surface of the first electrode opposite the layer of light-emissive organic material by a vacuum evaporation technique.
 24. A method according to claim 23 further comprising the step of forming a second layer of a dielectric material on the surface of the first layer of the dielectric material opposite the first electrode.
 25. A method according to claim 23 or claim 24 wherein the first layer of dielectric material comprises a layer of silicon monoxide.
 26. A method according to any of claims 23 to 25 wherein the first layer of dielectric material has a thickness in the range of 10 to 10,000 Angstroms.
 27. A method according to claim 26 wherein the first layer of dielectric material has a thickness in the range of 100 to 2000 Angstroms.
 28. A method according to claim 27 wherein the first layer of dielectric material has a thickness in the range of about 1000 Angstroms.

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29. A method according to claim 24 wherein the second layer of dielectric material is formed by a sputtering technique.
30. A method according to claim 24 wherein the second layer of dielectric material comprises a layer of a material selected from the group consisting of AlN, SiO₂, Si₃N₄ and Al₂O₃.
31. An organic light-emitting device produced by a method according to any one of claims 23 to 30.
32. An organic light-emitting device substantially as hereinbefore described with reference to the accompanying drawings.

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